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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/023,109

Applicant(s)

NIELSEN ET AL.

Examiner

Lun-See Lao

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 8, 11-23, 25-27 and 29-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-8, 11-23, 25-27 and 29-54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 06-28-2007.

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Introduction*

1. This action is in response to the amendment filed 08-24-2007. Claims 1-5, 7-8, 11, 14, 16-23, 26-27 and 29-31, 33-47, 49-54 have been amended and claims 6, 9-10 and 24, 28 have been canceled; and claims 51-54 have been added. Claims 1-5, 7-8, 11-23, 25-27 and 29-54 are pending.

### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the determining a filtering function for the first microphone, wherein such that the product of the transfer function and the filtering function is a single selected function, and wherein the single selected function equals a second product of a second transfer function and a second filter function of the second microphone; and outputting the coefficients to an equalization filter must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim limitation "determining a filtering function for the first microphone, wherein such that the product of the transfer function and the filtering function is a single selected function, and wherein the single selected function equals a second product of a second transfer function and a second filter function of the second microphone; and outputting the coefficients to an equalization filter" was not supported in the further detail in the specification nor in any of the claim and the examiner carefully reads the figs 2a-

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2b and 3 and specification page 11 line 1 to page 16 line 16. The specification does not indicate how to determining a filtering function for the first microphone, and to product of the transfer function and the filtering function is a single selected function, and the single selected function equals a second product of a second transfer function and a second filter function of the second microphone; and outputting the coefficients to an equalization filter.

Claim 16 is essentially similar to claim 1 and is rejected for the reason above apropos to claim 1.

5. Claim 42 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim limitation “ determining a filtering function for the first microphone, wherein the product of the transfer function of the microphone and the filtering function is a single selected function, wherein the single selected function equals a second product of a second transfer function and a second filter function of the other members of the two or more microphones; and outputting the coefficients to an equalization filter” was not supported in the further detail in the specification nor in any of the claim and the examiner carefully reads the figs 2a-2b and 3 and specification page 11 line 1 to page 16 line 16. The specification does not teach how to determining a filtering function for the first microphone, and to the product of the transfer function of the microphone and

the filtering function is a single selected function, wherein the single selected function equals a second product of a second transfer function and a second filter function of the other members of the two or more microphones; and outputting the coefficients to an equalization filter.

6. Claim 43 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim limitation "a determination circuit determining a filtering function for the first microphone wherein the product of the transfer function of the microphone and the filtering function is a single selected function, and wherein the single selected function equals a second product of a second transfer function and a second filter function of other members of the two or more microphones; and an equalization filter receiving the coefficients" was not supported in the further detail in the specification nor in any of the claim and the examiner carefully reads the figs 2a-2b and 3 and specification page 11 line 1 to page 16 line 16. The specification does not teach how to a determination circuit determining a filtering function for the first microphone wherein the product of the transfer function of the microphone and the filtering function is a single selected function, and wherein the single selected function equals a second product of a second transfer function and a second filter function of other members of the two or more microphones; and an equalization filter receiving the coefficients.

7. Claims 51-54 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claim limitation “ the one or more microphones comprises at least a first microphone and a second microphone, and wherein an output signal through the first microphone and the equalization filter for the first microphone is substantially equal to an output signal through the second microphone and the equalization filter for the second microphone with respect to phase or phase and magnitude ” was not supported in the further detail in the specification nor in any of the claim and the examiner carefully reads the figs 2a-2b and 3 and specification page 11 line 1 to page 16 line 16. The specification does not teach where the equalization filter for the first microphone is substantially equal to an output signal through the second microphone and the equalization filter for the second microphone with respect to phase or phase and magnitude.

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1, 16 and 42-43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Consider claim 1 recited "wherein the single selected function equals a second product of a second transfer function and a second filter function of the second microphone; and outputting the coefficients to an equalization filter" which is unclear to the examiner what is "outputting the coefficients to an equalization filter" referring to.

Claims 16 and 42-43 are essentially similar to claim 1 and are rejected for the reason above apropos to claim 1.

### ***Claim Objections***

11. The disclosure is objected to because of the following informalities: in the specification page 12 line 8, " a compensation filter 43" which appears to be— a compensation filter 33---. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



13. Claims 1-5, 7-8, 11, 14-23, 26, 29-31 and 33-46, 51-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaughn (US PAT. 5,233,665) in view of Hamabe (US PAT. 5,426,703).

Consider claim 16 as best understood with regards to the 112, 1<sup>st</sup> and 2nd problem mentioned above, Vaughn teaches an apparatus for equalizing output signals from a first and a second microphones (mic1, mic2 in fig.1), the apparatus comprising:

- a first generator generating a first predictable noise (44a in fig.1);
- a second generator generating a second predictable noise (44b in fig.1);
- a synchronizer synchronizing the first generator and the second generator (45, microprocessor controller, such as cpu, 44a, 44b in fig.1),
- a compensation filter compensating the known transfer function of the first converting, the compensation filter outputting a second output noise based on the compensation; an identification circuit determining coefficients representing a transfer function of the first microphone based on the first and second output noises (28 and see col. 5 lines 9-17);
- a determination circuit determining a filtering function for the first microphone, wherein the product of the transfer function of the microphone and the filtering function is a single selected function, and wherein the single selected function equals a second product of a second transfer function and a second filter function of the second microphone; and an equalization filter receiving the coefficients (see fig.1 and see col.5 line 50-col. 6 line 50); but Vaughn does not explicitly teach a first converter converting

the first predictable noise to an audio output, and a second converter converting the audio output to a first output noise.

However, Hamabe teaches a first converter converting the first predictable noise to an audio output, and a second converter converting the audio output to a first output noise(see fig. 1b, and see col. 5 line 31-col.6 line 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a microphone into each signal path and to include, into the apparatus of Vaughn, a module for applying a predictable noise to each signal path to generate the output noise. One of ordinary skill in the art would have been motivated to combine the teaching of Hamabe into Vaughn because this would have provided if the digital formal needs to convert to analog formal or analog formal convert to digital formal for the outputting signals and an active noise eliminating system which can correct and update the noise elimination transfer function for providing a more reliable noise elimination function without causing noise pressure divergence (Hamabe, col. 2, lines 10-16).

As to claim 1, this is the method claim corresponding to apparatus claim 16. See previous apparatus claim 16 for rejection.

Consider claim 43 as best understood with regards to the 112, 1<sup>st</sup> and 2nd problem mentioned above, Vaughn teach a sound system for two or more microphones for transmitting sound signals, comprising:

- a first generator generating a first predictable noise (44a in fig.1);
- a second generator generating a second predictable noise(44b);

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a synchronizer synchronizing the first generator and the second generator(45, microprocessor controller, such as cpu, 44a, 44b in fig.1),

a compensation filter compensating the known transfer function of the first converter, the compensation filter outputting a second output noise based on the compensation (26 in fig.1);

an identification circuit determining coefficients representing a transfer function of the first microphone based on the first and second output noises (10 and see col. 9 lines 45-col. 10 line 65);

a determination circuit determining a filtering function for the first microphone wherein based on a single selected function for the one or more microphones such that the product of the transfer function of the microphone and the filtering function is a single selected function (23 in fig.1),

and wherein the single selected function equals a second product of a second transfer function and a second filter function of other members of the two or more microphones; and an equalization filter receiving the coefficients(see fig.1 and see col.5 line 50-col. 6 line 50); but Vaughn does not explicitly teach a first converter converting the first predictable noise to an audio output, and a second converter converting the audio output to a first output noise.

However, Hamabe teaches a first converter converting the first predictable noise to an audio output, and a second converter converting the audio output to a first output noise(see fig. 1b, and see col. 5 line 31-col.6 line 67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a microphone into each signal path and to include, into the apparatus of Vaughn, a module for applying a predictable noise to each signal path to generate the output noise. One of ordinary skill in the art would have been motivated to combine the teaching of Hamabe into Vaughn because this would have provided if the digital formal needs to convert to analog formal or analog formal convert to digital formal for the outputting signals and an active noise eliminating system which can correct and update the noise elimination transfer function for providing a more reliable noise elimination function without causing noise pressure divergence (Hamabe, col. 2, lines 10-16).

As to claim 42, this is the method claim corresponding to apparatus claim 43. See previous apparatus claim 43 for rejection.

Consider claims 17-18, Vaughn teaches an apparatus of the selected function is the transfer function (see fig.1, (23)) for one of the first and second microphones (20a and see col.7 line 1-col.8 line 35); and an apparatus of the selected function is a common factor (such as 150HZ high pass in fig.1 and col.5 line 51-col.6 line 67).

As to claims 2-3, these are method claims of claims 17-18 and thus note the rejections of claims 17-18, respectively.

As to claims 44-45, these are system claims of claims 17-18 and thus note the rejections of claims 17-18, respectively.

Consider claim 19, Vaughn teaches an apparatus of the module for applying the filtering function comprises:

a loader loading the filtering function (see fig.1 (27)) to the equalization filter (28 and see col. 5 line 9-17).

As to claim 4, it is the method claim corresponding to apparatus claim 19. See previous apparatus claim 19 for rejection.

Consider claim 20 Vaughn teaches that the first predictable noise is a first predictable noise sample signal; and wherein the second predictable noise is a second predictable noise sample signal, and wherein the second predictable noise sample signal has a property substantially identical to the first predictable noise sample signal ( (44a ,44b in fig.1 by 45, microprocessor controller, such as cpu and see col.5 line 31-col.6 line 67).

As to claim 5, it is the method claim corresponding to apparatus claim 20. See previous apparatus claim 20 for rejection.

As to claim 46, it is a sound system claim corresponding to apparatus claim 20. See previous apparatus claim 20 for rejection.

Consider claim 21, Hamabe teaches that the microphone is capable of converting a sound signal to an electrical analog signal, and wherein the apparatus comprises an analog-to-digital converter coupled to the microphone for converting the electrical analog signal into a digital signal (see fig.1b, (15a-15h) (see col. 5 line 32-col. 6 line 67). Note discussion of claim 16 for a motivation to combine.

Consider claim 22 Vaughn as modified teaches a module providing the first predictable noise with a propagation time delay, before the first microphone converting the first predictable noise sample to the first output noise; and a second module

providing a second predictable noise with the propagation time delay(see fig.1 and see col. 5 line 32-col. 6 line 67 and col. 9 line 45-col. 10 line 57).

As to claim 7, it is the method claim corresponding to apparatus claim 22. See previous apparatus claim 22 for rejection.

Consider claim 23 Vaughn teaches that the first predictable noise signal is a first predictable digital noise signal (see fig.1 (44a)), and the second predictable noise signal is a second predictable digital noise signal (44b), and wherein the further comprising:

noise generator for generating the first predictable digital noise signal (44a) and the second predictable digital noise signal (44b and see col. 5 line 32-col. 6 line 67)

As to claim 8, it is a method claim of claim 23 and see the previous claim 23 rejections.

Consider claim 26 Hamabe teaches that the first converter includes a loud speaker (7a-7d and see col. 5 line 32-col. 6 line 67). Note discussion of claim 16 for a motivation to combine.

Consider claim 29 Hamabe teaches that the propagation delay time is an integer multiple (see equation 1) of the first predictable noise sample (white noise and col. 5 line 32-col. 6 line 67); Note discussion of claim 16 for a motivation to combine.

As to claim 11, it is the method claim corresponding to apparatus claim 29. See previous apparatus claim 29 for rejection.

Consider claims 30-31 Vaughn teaches that apparatus of the first predictable digital noise signal (see fig.1, (44b)) or second predictable digital noise signal comprises a white noise signal (44a and see col. 5 line 32-col. 6 line 67); and apparatus of the first

predictable digital noise signal (44b) or the second predictable digital noise signal comprises a random noise signal (44a and see col. 5 line 32-col. 6 line 67).

As to claims 14-15, these are method claims of claims 30 -31 and thus note the rejections of claims 30 -31, respectively.

Consider claims 36-38, note discussion of claim 16 with respect to the apparatus. Vaughn further teaches an apparatus is comprising a listening device / hearing aid (see col. 6 lines 18-29) / headset (see fig.1 (40b)) comprising: two or more microphone (see fig.1, 20a) for transmitting sound signals to a user, outputs from the two or more microphones (20a) being equalized (see fig. 1 (28)) and col. 5 line 35-col. 6 line 67) by the apparatus (see rejection of claim 16).

As to claims 33-35, these are method claims of claims 36-38 and thus note the rejections of claims 36-38, respectively.

Consider claims 39-41, Vaughn teaches a hearing aid (a listening device and a headset and see col. 5 line 50-col. 6 line 29)) comprising:

a signal equalization filter (see fig.1, (28) and col.5 lines 9-17) provided for each of one or more microphones (20a), wherein the function of the signal equalization filter is determined by the signal equalization filter (see fig. 1 (28) and col. 5 line 35-col. 6 line 67).

Consider claims 51-54, as best understood with regards to the 112, 2nd problem mentioned above, Vaughn teaches an output signal through the first microphone and the equalization filter (28 in fig.1) for the first microphone (20a) is substantially equal (possibly by adjust 24 program gain amplifier) to an output signal through the second

microphone (20a) and the equalization filter (28 and see col. 5 lines 9-17) for the second microphone (20a) with respect to phase or phase and magnitude (44a and see col. 5 line 32-col. 6 line 67).

14. Claims 12-13, 25, 27, 32 and 47-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaughn (US PAT. 5,233,665) as modified by Hamabe (US PAT. 5,426,703) as applied to claims 16 and 43 above, and further in view of T. Schneider, DG. Jamieson, "A Dual channel MLS-Based Test system for Hearing-Aid Characterization", J audio Eng. Soc, Vol 41, No.7/8, 1993 July/August, P583-593.

Consider claim 25 Vaughn and Hamabe does not teach the an apparatus of the noise generator includes a maximum length sequence generator for generating the first predictable digital noise signal that is substantially identical to the second predictable digital noise signal on a sample-by-sample basis.

However, Schneider teaches that an apparatus (see fig.3) of the noise generator includes a maximum length sequence generator for generating the first predictable digital noise signal that is substantially identical to the second predictable digital noise signal on a sample-by-sample basis (it is inherently the MLS generator generated the predictable digital noise signal samples are identical in the same amount of time intense of the maximum length and see pages 583-590).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Schneider into the teaching of



Vaughn and Hamabe to reduce the noise and to provide a sound environment for the purpose of acquiring the desired audio sound quality.

Consider claims 27, 32 they are essentially similar to claim 25 and are rejected for the reason stated above apropos to claim 25.

As to claims 12-13, these are method claims of claims 25 and 27 and thus note the rejections of claims 25 and 27, respectively.

As to claims 47-48, these are sound system claims of claims 25, 27 and thus note the rejections of claims 25, 27, respectively.

15. Claims 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vaughn (US PAT. 5,233,665) as modified by Hamabe (US PAT. 5,426,703) as applied to claims 16 and 43 above, and further in view of Roberts, R. A. et al., "Digital Signal Processing," ISBN 0-201-16350-0, pp. 486-489.

Consider claims 49-50, Vaughn and Hamabe do not explicitly teach that the identification circuit performs an Auto Regressive Moving Average (ARMA) to estimate the transfer function.

However, Roberts teaches that the identification circuit performs an Auto Regressive Moving Average (ARMA) to estimate the transfer function (see "Digital Signal Processing," ISBN 0-201-16350-0, pp. 486-487).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Roberts into the teaching of Vaughn

and Hamabe to provide a sound environment for the purpose of acquiring the desired audio sound quality for the market demand.

### ***Response to Arguments***

16. Applicant's arguments with respect to claim 1-5 and 7-50 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argued that Vaughn does not teach or suggest the generation of a second predictable noise which is synchronized in time to the first predictable noise (see remarks page 21, 3<sup>rd</sup> and 4<sup>th</sup> paragraph).

The examiner disagrees. Vaughn teaches a white noise 44a and a pink noise 44b which are selected by a program selector/combiner 26 to be input into the bandpass filters. See Figure 1, column 5, line 59, and column 6, lines 8-10 of Vaughn. It should be apparent to a person skilled in the art that a pink noise is a signal with a frequency spectrum, and it would have been obvious to synchronize a white noise to the speakers and headset for the harmonic audio signal. The microprocessor controller 45 of Vaughn is a synchronizer, because, a person skilled in the art will interpret the microprocessor such as a CPU which would be a synchronizer and synchronize between any two signals. It meets the limitation as recited in claim.

### ***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Niederdrank (US 2004/0109578) is cited to show other listening device.

19. Any response to this action should be mailed to:

Mail Stop \_\_\_\_ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:  
**(703) 872-9306**

Hand-delivered responses should be brought to:  
Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao, Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao, Lun-See *L.S.*  
Patent Examiner  
US Patent and Trademark Office  
Knox  
571-272-7501  
Date 11-02-2007

  
VIVIAN CHIN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2000